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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/661,945

09/12/2003

Neil Birkett

9931-0042

8389

73552

7590

03/20/2008

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EXAMINER

VLAHOS, SOPHIA

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

03/20/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/661,945	<b>Applicant(s)</b> BIRKETT, NEIL	
	<b>Examiner</b> SOPHIA VLAHOS	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,4-8,10,12,13,20-23 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 1,3,9,11,14-19,24,25 and 27-33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,12 and 13 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 2,4-8,20-23 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This application is in condition for allowance except for the following formal matters:

#### *Claim Objections*

2. Claims 2, 4, 20, 26 (received on 1/30/2008) are objected to because of the following informalities:

Claim 2, line 18 (after the preamble) reads: "generating at least one digital counter signal responsive to **the** differences..." (emphasis added), the "the" should be removed.

Claim 2, line 21 (after the preamble) reads: "signal with the reference signal; and" this should be "signal with the **at least one** reference signal; and" to match the mentioned "at least one reference signal" of line 19.

Claim 4, reads: "comprising using a multi-level comparator and a logic circuit to generate **the digital up/down and count/hold control signals.**" (emphasis added).

These limitations refer to cancelled limitations of claim 2.

Claim 20, line 4 (after the preamble) reads: "digital engine..." should be "**a** digital engine..."

Claim 20, (last line) reads: "by multiplexing the up/down counter signal with **the at least one reference signal.**" Whereas lines 4 after the preamble reads: "and a reference signal;" not at least one reference signals as in the last line of the claim.

Claim 26, (lines 23- 24 after the preamble) recite: "...logically manipulating the compared signal to generate at least one digital counter **signals**;" this should be "digital counter signal" to match with the "digital counter signal" of line 28.

***Allowable Subject Matter***

3. Claims 2, 20, 26 would be allowed if they are corrected for the minor informalities pointed out above in the claim objection section.

Claims 4-8, 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of the record fails to teach or suggest alone or in combination: In a wireless receiver where a radio frequency signal is received, downconverted, and processed into in-phase (I) and quadrature (Q) signal paths, an automatic gain control circuit (AGC) comprising multiple AGC stages where each of the AGC stages includes: an analog to digital converter (ADC) to convert the detected I and Q output signals to digital detected I and Q output signal; a digital engine to digitally adjust the respective I and Q VGAs responsive to the digital detected I and Q output signal; where the ADC comprises: i. a multi-level comparator to compare the detected I and Q output signal to at least one reference signal; and ii. a logic circuit to generate at least one digital

counter signal responsive to the multi-level comparator ; and where the digital engine comprises: i. an up/down counter to generate an up/down counter signal responsive to the at least one digital counter signal; and ii. a multiplexer to generate a Control signal that digitally adjusts the respective I and Q VGAs by multiplexing the up/down counter signal with the at least one reference signal, as recited in claim 10 and in combination with other elements of the claim.

Claims 10, 12-13 are allowed.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is (571)272-5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SOPHIA VLAHOS/  
Examiner, Art Unit 2611  
3/12/2008

/Mohammad H Ghayour/  
Supervisory Patent Examiner, Art Unit 2611